

May 7, 2012

Mr. Dave Tomten
U.S. Environmental Protection Agency
1435 N. Orchard Street
Boise, ID 83706

RE: Transmittal of Proposed 2012 Surface and Groundwater Monitoring Programs - Final Rev2

Dear Dave:

This letter presents the proposed 2012 surface water and groundwater monitoring program at the P4 Production, L.L.C. (P4) mines near Soda Springs, Idaho. The mines include the inactive properties of Ballard, Henry, and Enoch Valley mines, collectively referred to as the Sites. The sampling program presented in this letter was specifically requested by the Agencies and Tribes (A/T) in an conference call held on April 9, 2012. The work is being performed in accordance with the requirements of the Administrative Settlement Agreement and Order on Consent/Consent Order for Remedial Investigation/Feasibility Study (2009 CO/AOC; USEPA, 2009). The proposed 2012 surface water and groundwater monitoring objectives and program are further outlined below.

2012 Surface Water Monitoring Program

The objective of previous surface water monitoring conducted at the sites (2004-2008) was to support characterization of the nature and extent of impacts to water quality associated with releases to surface water from potential sources at the Sites. In 2009, the surface water monitoring program transitioned from characterization to an interim monitoring plan that provided an annual assessment of surface water conditions downstream of potential sources associated with the Sites. This longer term data allows for a more effective evaluation of individual mine site remedies in the future and a greater understanding of potential long-term trends. The details of this plan, including data quality objectives (DQOs) and the field sampling plan (FSP), are included in the attached A/T-approved *Final Revision 2 - 2009 and 2010 Surface Water Monitoring Sampling and Analysis Plan (2009/2010 Surface Water SAP; MWH, 2009)*.

As the objectives of the 2012 monitoring are the same as the 2009/2010 monitoring program, the 2012 surface water monitoring will mimic the 2009/2010 program with the following differences:

- Headwater streams, seeps, and springs (Surface Expressions of Groundwater [SEGW]) will be included in the 2012 surface water monitoring program. Sample locations characterized as SEGW locations were originally included in the A/T-approved *Final Revisions 2 - 2010 Groundwater Sampling and Analysis Plan (2010 Groundwater SAP; MWH, 2010)*. Because the sampling methodologies for the SEGW locations are very similar to the surface water locations, all SEGW locations from the *2010 Groundwater SAP* have been included in the list of surface water stations.
- For the SEGW stations, the primary difference in the analytes between the 2010 groundwater monitoring program and the 2012 surface water monitoring program is in the total and dissolved analyses. For the groundwater program, the total fraction for cadmium and vanadium was analyzed, and for the surface water program the dissolved fraction was analyzed. These SEGW stations will be compared to surface water screening criteria, which are based on the dissolved fraction. Therefore, analyses for cadmium and vanadium will now be for the dissolved fraction.

- Dissolved iron and chloride have been removed from 2012 list of surface water analytes because sufficient data for these analytes now exists to support geochemical characterization of water types.
- Select stations that are currently proposed as background stations (MST048, MST0226, MST274, and MST275) will be included in the 2012 surface water monitoring program. The data from these stations may be incorporated into background statistics at a future date, presumably during the risk assessment phase of the project where recalculation of select background statistics would benefit decisions for a specific media/exposure scenario.

The key elements of the 2012 surface water monitoring program are summarized on Table 1 - *Surface Water and Groundwater Analyte List* and Table 2 - *Surface Water Monitoring Locations, Frequency and Schedule*. The sample collection and analysis will be performed according to the methods and procedures outlined in the *2009/2010 Surface Water SAP and FSP* included as Attachment 1 to this letter.

As shown on Table 2, a subset of the surface water monitoring locations will be re-evaluated after the spring 2012 sampling event to determine whether they will be sampled in the fall. As in the *2009/2010 Surface Water SAP*, those sites with consistently higher selenium and sulfate concentrations in the fall as compared to spring will be retained for sampling. The fall sampling decision will use both the spring 2012 and historical data to determine which stations, if any, need to be re-sampled in fall 2012.

2012 Groundwater Monitoring Program

P4 believes that the objectives of groundwater monitoring that occurred in 2010 are essentially the same as the proposed 2012 sampling program. Characterization of groundwater at the Sites has been conducted in a phased approach since 2004. Ongoing monitoring of contaminants of potential concern (COPC) concentrations and piezometric conditions in monitoring wells is needed to complete characterization of the nature and extent of COPCs in groundwater. The groundwater data collected under the *2010 Groundwater SAP* and this 2012 plan will continue to support the RI/FS evaluation and refinement of the hydrogeologic conceptual models of the Sites. However, it is noted that the groundwater monitoring plan will need to be revisited in the future to transition from characterization to a long-term monitoring plan.

Changes proposed between the 2010 groundwater monitoring program and the 2012 groundwater sampling program are outlined below.

- SEGW (i.e., headwater streams, seeps, and springs) have been moved in 2012 from the groundwater program to the 2012 Surface Water Monitoring Program as discussed above.
- In 2010, groundwater collected from wells was analyzed following a primary, regular, or expanded list of analytes (see Table 2 of the *2010 Groundwater SAP*). With the exception of MMW037, installed in 2010, groundwater monitoring wells (2009 and older) and direct-borehole wells will be sampled for the primary analyte list in spring 2012, as they have been sampled and analyzed at least once for the expanded and regular list of analytes (see Sections 3.1 and 3.2 of the *2010 Groundwater SAP*). In addition in 2012, total manganese will be added to the primary list. This addition to the primary list will be re-evaluated based on the 2012 sampling results to determine if it is warranted in future sampling rounds. MMW037 will be sampled for the expanded list in spring 2012 and, based on analytical results, will be sampled for the primary list during subsequent sampling events.

- MMW024 and MMW026 at the Enoch Valley Mine have been added back to the list of monitor wells sampled as part of the 2010 *Groundwater SAP*. MMW026 is currently proposed as a background well location and MMW024 is needed to monitor concentrations in the Dinwoody Formation.
- Agricultural, domestic, and production wells that have been proposed as background wells will be sampled once in 2012. These wells will be sampled for the regular analyte list. Given the complexities associated with accessing the private wells, sampling of these stations will occur later in 2012, as deemed practical. The P4 production well MPW019, will be sampled in spring 2012 because access to this well is not an issue.
- No fall groundwater sampling is proposed. Review of 2010 and historical selenium and sulfate data for the three wells sampled in the fall of 2010, MMW010, MMW013, and MMW029, does not support additional fall sampling events.

The key elements of the 2012 groundwater monitoring program are summarized on Table 1, *Surface Water and Groundwater Analyte List* and Table 3, *Groundwater Locations, Frequency and Schedule*. The sample collection and analysis will be performed according to the methods and procedures outlined within the 2009 *Groundwater Monitoring SAP and FSP* (MWH, 2009) and the 2010 *Groundwater Monitoring SAP and FSP* included as Attachments 2 and 3 to this letter. As shown on Table 3 on this letter, sampling of MMW012 and MBW112 is still contingent on water occurring in these wells. If groundwater is present in either of these wells, and the wells recover following purging, then the wells will be sampled in consultation with the A/Ts.

We appreciate your timely review of the proposed sampling program. P4 anticipates sampling to begin on May 7, 2012. If you have any questions or comments on this proposed sampling event, please do not hesitate to contact Rachel Roskelley at (208) 547-1248, or me at (801) 617-3250.

Best Regards,



Vance Drain, P.G.
Project Manager

Distribution:

Dave Tomten, USEPA
Tim Mosko, CH2M Hill
Michael Rowe, IDEQ
Gerry Winter, IDEQ
Mary Kauffman, USDA-FS
Caribou National Forest, Soda Springs District Office
James Alexander, USDA
Kelly Wright, Shoshone-Bannock Tribes
Sandi Fisher, USFWS
Susan Hanson, Shoshone-Bannock Tribes
Colleen O'Hara, BLM
Celeste Christensen, MWH
Bruce Narloch, MWH
MWH Project File

Joe Wallace, USEPA
Lorraine Edmond, USEPA
Marcy Pearhill, IDEQ
Sherri Clark, FS
Eldine Stevens, BIA
Gary Billman, IDL
Carolann Cole, North Wind Inc.
Mike Vice, Monsanto
Randy Vranes, Monsanto/P4
Rachel Roskelley, Monsanto/P4
Randy White, Monsanto
Dale Ralston, RHS
Cary Foulk, MWH
Vance Drain, MWH

TABLES

**TABLE 1
SURFACE WATER AND GROUNDWATER
ANALYTE LIST**

Category	Fraction	Analytes (Analytical Method)
Surface Water		
Streams , Seeps, and Springs,	Unfiltered Filtered Filtered Filtered Filtered Unfiltered	Se (EPA 6020A) Cd (EPA 6020A) V (EPA 6010B) Ca, Mg (EPA 6010B) ^a SO ₄ (EPA 300.0) TDS (EPA 160.1)
Groundwater		
2009 and Older Monitor Wells and Direct Push Borehole Wells	Unfiltered ^b Filtered Unfiltered	<u>Primary Analyte List</u> Cd, Mn, Se (EPA 6020A) SO ₄ (EPA 300.0) TDS (EPA 160.1)
Agricultural, Domestic and Production Wells	Unfiltered Unfiltered Unfiltered Unfiltered Unfiltered Filtered Filtered Filtered Filtered Filtered	<u>Regular Analyte List</u> TDS (EPA 160.1) TSS (EPA 160.2) Al, Fe, V (EPA 6010B) Cd, Cr, Mn, Ni, Se, Zn (EPA 6020A) Gross alpha, gross beta (EPA 900) Nitrogen - total nitrate-nitrite (EPA 353.2) SO ₄ , Cl (EPA 300.0) Ca, Fe, Mg, K, Na (EPA 6010B) Alkalinity (EPA 310.2) Hardness (SM2340B)
2010 Monitor Wells ^c	Unfiltered Unfiltered Unfiltered Unfiltered Filtered Filtered Filtered Filtered Filtered Unfiltered Unfiltered	<u>Expanded Analyte List</u> Al, Ba, Be, Fe, Mo, V (EPA 6010B) Sb, As, Cd, Cr, Co, Cu, Pb, Mn, Ni, Se, Ag, Ti, U, Zn (EPA 6020A) Hg (EPA 7471) Gross alpha, gross beta (EPA 900) Nitrogen - total nitrate-nitrite (EPA 353.2) SO ₄ , Cl (EPA 300.0) Ca, Fe, Mg, K, Na (EPA 6010B) Alkalinity (EPA 310.2) Hardness (SM2340B) TDS (EPA 160.1) TSS (EPA 160.2)

Notes:

^aHardness is calculated on filtered fractions of Ca and Mg

^bDirect-push monitoring wells may be sampled for dissolved or dissolved and total fractions depending on turbidity (see *2010 Groundwater SAP*).

^cThe only 2010 well is MMW037, it will be sampled for the expanded list once in 2012 and subsequently will be sampled for the primary list based on the spring 2012 analytical results.

TABLE 2
SURFACE WATER MONITORING LOCATIONS, FREQUENCY, AND SCHEDULE

Mine	Station ID ^a	Feature Name ^b	Location ^c			
			Latitude	Longitude	Spring	Fall ^d
Ballard Mine	MST019	Blackfoot River below Ballard Creek	42 48 49.28	111 30 21.52	X	TBD
	MST020	Blackfoot River below State Land Creek	42 48 31.97	111 30 06.28	X	TBD
	MST050	Long Valley Creek below Ballard Mine	42 50 54.00	111 29 49.00	X	
	MST066	Ballard Creek above Blackfoot River	42 48 56.30	111 30 07.32	X	
	MST067	Ballard Creek headwaters	42 49 23.79	111 29 36.31	X	
	MST069 ^e	Short Creek below Ballard Mine	42 49 11.23	111 29 19.75	X	TBD
	MST089	Wooley Valley Creek, below North Fork Wooley Valley Creek	42 49 28.70	111 26 19.40	X	
	MST090	Wooley Valley Creek, above North Fork Wooley Valley Creek	42 49 28.00	111 26 49.00	X	
	MST092	North Fork Wooley Valley Creek above Wooley Valley Creek	42 49 40.00	111 27 04.30	X	
	MST094	Spring-fed trib. #1 of N. Fork Wooley Valley Cr., below Ballard Mine	42 49 56.00	111 28 10.00	X	
	MST095	Spring-fed trib. #2 of N. Fork Wooley Valley Cr., below Ballard Mine	42 49 39.00	111 28 05.00	X	
	MST096 ^f	Tributary of North Fork Wooley Valley Creek, below Ballard Mine	42 49 30.00	111 27 45.00	X	
	MDS030 ^f	Pit #2 Upper Dump Seep	42 49 44.25	111 29 20.95	X	TBD
	MSG004 ^f	Holmgren Spring	42 49 16.75	111 28 16.04	X	TBD
	MSG005 ^f	Cattle Spring	42 49 19.07	111 28 01.90	X	
	MSG006 ^f	Southeast Spring	42 49 41.43	111 27 51.34	X	
	MSG007 ^f	South of Southeast Spring	42 49 38.19	111 27 42.68	X	
Henry Mine	MST044	Immediately below Henry Mine (1997 #24)	42 53 50.60	111 29 24.80	X	TBD
	MST045	Little Blackfoot River above Henry Creek	42 54 10.70	111 29 30.10	X	TBD
	MST051	East Fork Long Valley Creek below Henry Mine	42 52 18.23	111 28 58.49	X	
	MST057	West Fork Lone Pine Creek above Lone Pine Creek	42 51 59.49	111 26 21.78	X	
	MST063	Strip Mine Creek below Henry Mine	42 52 01.70	111 27 03.40	X	
	MDS034 ^f	Henry Mine, Dump Seep #3	111 29 23.87	42 53 46.90	X	TBD
Enoch Valley Mine	MST128	Angus Creek above Rasmussen Creek	42 51 08.00	111 22 32.00	X	
	MST131	Rasmussen Creek above Angus Creek	42 51 08.00	111 22 31.00	X	
	MST132	Angus Creek Above No Name Creek and below Rasmussen Creek	42 51 07.00	111 22 29.00	X	
	MST133	Rasmussen Creek below Enoch Valley Mine	42 51 48.00	111 23 50.00	X	
	MST136 ^e	Rasmussen Creek headwaters near Enoch Valley Mine Shop Pond	42 52 34.00	111 25 03.00	X	
	MST143	East Fork Rasmussen Creek above Rasmussen Creek	42 51 31.70	111 23 01.40	X	

TABLE 2
SURFACE WATER MONITORING LOCATIONS, FREQUENCY, AND SCHEDULE

Mine	Station ID ^a	Feature Name ^b	Location ^c			
			Latitude	Longitude	Spring	Fall ^d
	MST144 ^f	<i>West Pond Creek headwaters</i> , below West Pond	42 52 16.07	111 24 18.66	X	TBD
	MST269	<i>East Fork Rasmussen Creek</i> headwaters	42 52 16.57	111 23 41.69	X	
	MDS025 ^e	West Dump Seep	42 52 13.00	111 24 11.00	X	TBD
	MDS026 ^f	South Dump Seep	42 51 54.20	111 23 36.27	X	TBD
Select Background Stations	MST048	Little Blackfoot River	42 55 12.99	111 26 26.78	X	
	MST093	<i>North Fork Wooley Valley Creek</i> above Ballard Mine	42 50 28.00	111 28 34.00	X	
	MST226	Tributary to Lone Pine Creek	42 51 42.27	111 25 55.16	X	
	MST274	West Fork of Rasmussen Creek	42 51 31.00	111 23 34.00	X	TBD
	MST275	Tributary to Lone Pine Creek	42 51 56.33	111 25 04.24	X	TBD

MDS - Dump Seep
MSG - Spring
MST – Stream
TBD - To be determined

^aTable does not include all available surface water monitoring stations at the P4 Sites, only those sites identified in the *2009 and 2010 Surface Water SAP*, as well as Surface Expressions of Groundwater (SEGW) sites from the *2010 Groundwater SAP*.

^bStream names in *italics* were assigned by either IMA or P4 Production as these streams are unnamed on USGS maps or, as far as is known, are unnamed by common usage of local inhabitants. The reason for this is that most such streams are small with intermittent or ephemeral flows.

^cLocation (GPS) coordinates use the NAD27 datum and are presented in ddd mm ss.ss format (degrees minutes seconds).

^dFall sampling program will be evaluated based on 2012 and historical results and will follow the protocol set forth in the 2009 and 2010 Surface Water SAP.

^eIncluded as a sampling station in the *2009 and 2010 Surface Water SAP* as well as the *2010 Groundwater SAP*.

^fIncluded as a sampling station in the *2010 Groundwater SAP*.

TABLE 3
GROUNDWATER MONITORING LOCATIONS, FREQUENCY, AND SCHEDULE

Mine	Station ID	Station Description	Location		Well Install Year	Groundwater System Monitored Screened Interval (ft bgs)	Spring/Fall	Analyte List
			Latitude	Longitude				
Ballard Mine	MBW006	Short Creek	42 49 04.15	111 29 25.80	2008	Alluvial 14-9	Spring	Primary
	MBW009	Blackfoot River Road @ Monsanto Haul Road	42 49 12.96	111 29 48.71	2008	Alluvial 11-6	Spring	Primary
	MBW011	Ballard Creek	42 49 23.46	111 29 38.93	2008	Alluvial 15-10	Spring	Primary
	MBW026	Ballard, Western Shallow	42 50 01.91	111 29 54.83	2008	Alluvial 11-6	**	NA
	MBW027	Ballard, Western Deeper	42 50 02.23	111 29 54.34	2008	Alluvial 16-11	Spring	Primary
	MBW028	Torgesen	42 49 34.44	111 29 42.93	2008	Alluvial 21-16	Spring	Primary
	MBW032	Holmgren	42 49 33.92	111 28 11.14	2008	Alluvial 15-10	Spring	Primary
	MBW048	Wooley Valley Creek	42 50 03.76	111 27 56.21	2008	Alluvial 9-4	Spring	Primary
	MBW130	East of Ballard Mine, along Wooley Valley Creek	42 49 40.00	111 27 10.00	2009	Alluvial 25-20	Spring	Primary
	MBW131	Northeast of Ballard Mine, near MST093	42 50 24.00	111 28 33.00	2009	Alluvial 8-3	Spring	Primary
	MBW135	Southeast of Ballard Mine, across Blackfoot River Road	42 48 40.00	111 29 43.00	2009	Alluvial 20-15	Spring	Primary
	MMW006	South of West Ballard Pit; south of waste rock dumps	42 49 20.00	111 29 03.00	2007	Wells Formation 330-310	Spring	Primary
	MMW017	Northwest of Ballard Mine into Long Valley Creek alluvial flow field	42 49 59.60	111 29 47.40	2007	Alluvial 56-36	Spring	Primary
	MMW018	East of Ballard Mine in Wooley Valley alluvial flow field	42 49 39.40	111 28 04.50	2007	Alluvial/ Dinwoody Formation 33-18	Spring	Primary
	MMW020	East side of West Ballard Pit (MMP035); replacement of MMW001	42 49 36.40	111 29 03.30	2007	Wells Formation 408-388	Spring	Primary
	MMW021	West side of West Ballard Pit (MMP035); replacement of MMW002	42 49 35.60	111 29 23.90	2007	Wells Formation 250-230	Spring	Primary
	MMW029	East Ballard mine area in the vicinity of MMW018	42 49 37.78	111 28 08.74	2008	Dinwoody Formation 60-45	Spring/TBD	Primary
	MMW030	Along the southwestern portion of Ballard Mine in the vicinity of MMW016A	42 49 10.72	111 29 17.03	2008	Wells Formation 155-135	Spring	Primary
	MMW031	Along the western perimeter of Ballard Mine in the vicinity and north of MMW017	42 50 11.87	111 29 43.05	2008	Wells Formation 200-180	Spring	Primary

TABLE 3
GROUNDWATER MONITORING LOCATIONS, FREQUENCY, AND SCHEDULE

Mine	Station ID	Station Description	Location		Well Install Year	Groundwater System Monitored Screened Interval (ft bgs)	Spring/Fall	Analyte List
			Latitude	Longitude				
	MMW032	Adjacent to MWD084	42 50 09.30	111 28 21.80	2009	Dinwoody Formation 65-55	Spring	Primary
	MMW033	Deeper well nested with MMW029	42 49 35.30	111 28 11.90	2009	Dinwoody Formation 150-130	Spring	Primary
	MW-15A	West Ballard Mine near MST068	42 49 35.99	111 29 36.55	2006	Alluvial 40-30	Spring	Primary
	MW-16A	Southwest Ballard Mine near MST069	42 49 08.83	111 29 16.53	2006	Alluvial 30-20	Spring	Primary
Henry Mine	MBW152	North Henry Mine, along Little Blackfoot River	42 54 14.00	111 29 23.00	2009	Alluvial 15-10	Spring	Primary
	MMW004	North of Henry Mine north pit	42 54 07.70	111 29 46.50	before 2007*	Alluvial/Dinwoody Formation No screen	**	NA
	MMW010	Southeast of Center Henry Pit; near MPW023	42 52 22.30	111 27 51.30	2007	Alluvial 32-12	Spring/TBD	Primary
	MMW011	Northwest of Center Henry Pit; south of Little Blackfoot River	42 53 48.30	111 29 30.00	2007	Wells Formation 115-95	Spring	Primary
	MMW014	Southeast of Henry Mine center pit in Lone Pine Creek alluvial flow field	42 51 59.30	111 27 05.20	2007	Alluvial 22-7	**	NA
	MMW019	North of Henry Mine center pit	42 53 50.20	111 29 25.40	2007	Phosphoria Formation 14-4	**	NA
	MMW022	Northeast lobe of Henry Mine waste rock dump MWD086	42 53 09.20	111 28 18.30	2007	Dinwoody Formation 326-306	Spring	Primary
	MMW023	Henry Mine North Pit	42 54 20.50	111 30 27.50	2007	Wells Formation 357-352	Spring	Primary
	MMW028	Near the Little Blackfoot River northwest of MMW019	42 53 50.24	111 28 60.00	2008	Dinwoody Formation 96-76	Spring	Primary
Enoch Valley Mine	MBW085	Rasmussen Creek	42 51 55.52	111 24 04.12	2008	Alluvial 12.25-7.25	Spring	Primary
	MBW087	Rasmussen Road and Agrium Haul Road intersection	42 51 38.34	111 23 44.32	2008	Alluvial 12-7	Spring	Primary
	MBW099	Agrium Haul Road North	42 51 57.08	111 23 28.14	2008	Alluvial 29-24	Spring	Primary
	MBW107	Western Enoch Valley, East of fence	42 53 28.32	111 25 55.86	2008	Alluvial 40-35	Spring	Primary
	MBW112	Western Enoch Valley, west of fence	42 53 34.67	111 26 13.72	2008	Alluvial 18-13	***	Primary
	MMW007	South of EVM South Dump; near edge of dump footprint	42 51 48.50	111 23 34.40	2007	Alluvial/Dinwoody Formation 90-70	Spring	Primary
	MMW008	South of EVM South Dump; south and	42 51 48.60	111 23 29.80	2007	Alluvial/Dinwoody	**	NA

TABLE 3
GROUNDWATER MONITORING LOCATIONS, FREQUENCY, AND SCHEDULE

Mine	Station ID	Station Description	Location		Well Install Year	Groundwater System Monitored Screened Interval (ft bgs)	Spring/Fall	Analyte List
			Latitude	Longitude				
		downgradient of MMW007				Formation 197-177		
	MMW009	Central North Dump (MWD091)	42 53 34.60	111 25 33.80	2007	Wells Formation 554-549	Spring	Primary
	MMW012	Northwest of EVM North Dump in Lone Pine Creek alluvial flow field	42 53 28.75	111 25 53.34	2007	Alluvial/ Dinwoody Formation 52-28	***	Primary
	MMW013	Southwest of EVM in Rasmussen Creek alluvial flow field	42 52 05.70	111 24 12.00	2007	Dinwoody Formation 35-25	Spring/TBD	Primary
	MMW024	Along the south end of Enoch Valley Mine, near MMW013	42 52 11.73	111 24 11.86	2008	Dinwoody Formation 200-180	Spring	Primary
	MMW025	Along the south end of Enoch Valley Mine, near MMW007	42 51 49.16	111 23 31.95	2008	Dinwoody Formation 200-180	Spring	Primary
	MMW026	Northeast of MPW006/MMW008	42 51 56.48	111 23 25.75	2008	Wells Formation 355-335	Spring	Primary
	MMW027	Near MMW012	42 53 28.97	111 25 53.50	2008	Dinwoody Formation 120-100	Spring	Primary
	MMW034	Deeper well nested with MMW013	42 52 09.10	111 24 14.80	2009	Dinwoody Formation 156-136	Spring	Primary
	MMW035	Deeper well nested with MMW027	42 53 29.50	111 25 54.30	2009	Dinwoody Formation 199 – 179	Spring	Primary
	MMW036	Well west of MMW027	42 53 26.70	111 26 05.60	2009	Basalt 135 – 115	Spring	Primary
	MMW037	Nested with MMW036	42 53 26.14	111 26 06.82	2010	Dinwoody 302 – 292	Spring	Expanded
Agriculture Domestic and Production wells ^a	MPW019	EVM shop/office	42 52 37.40	111 25 16.52	1990	Dinwoody or Thaynes 17.5-235	Spring	Regular
	MAW001	School Bus Well	42 53 15.00	111 26 39.99	ND	ND ND	TBD	Regular
	MAW002	(b) Field Well	42 53 51.00	111 26 41.99	1969	Alluvium ^b 14-146	TBD	Regular
	MAW003	(b) (6) Field Well	42 53 24.00	111 27 21.59	1987	Thaynes ^c 20-30/ 160-180	TBD	Regular
	MAW004	(b) (6) Field Well	42 51 57.01	111 29 22.21	ND	ND ND	TBD	Regular
	MAW005	(b) (6) Field Well	42 51 44.32	111 23 08.79	1990	Alluvium, Wells ^b 159-239	TBD	Regular
	MAW006	(b) (6) Field Well West	42 51 59.54	111 30 49.85	1988	Basalt ^b 89-109	TBD	Regular
	MAW007	(b) (6) Field Well North	42 52 29.99	111 29 49.20	1988	Alluvium ^b 59-119	TBD	Regular

TABLE 3
GROUNDWATER MONITORING LOCATIONS, FREQUENCY, AND SCHEDULE

Mine	Station ID	Station Description	Location		Well Install Year	Groundwater System Monitored Screened Interval (ft bgs)	Spring/Fall	Analyte List
			Latitude	Longitude				
	MDW001	(b) (6) House Well	42 53 24.00	111 27 25.99	1987	Travertine ^b 70-110/139-160	TBD	Regular
	MDW002	(b) (6) House Well	42 54 17.97	111 26 46.58	1987	Alluvium, Thayne ^b 20-30/160-280	TBD	Regular
	MDW003	(b) House Well	42 52 29.99	111 26 45.99	ND	ND ND	TBD	Regular
	MDW004	(b) (6) House Well	42 49 26.39	111 33 14.40	ND	ND ND	TBD	Regular
	MDW005	Cedar Bay RV Park Well	42 54 32.40	111 31 51.59	1969	Alluvium, Travertine ^b 40-45	TBD	Regular
	MDW006	(b) House Well	42 54 43.20	111 28 47.99	ND	ND ND	TBD	Regular

Notes:

MBW - Borehole Monitoring Well (direct-push pre-packed screen monitoring well)

MMW - Monitoring Well

NA - Not Applicable

ND - Not Determined

TBD - To Be Determined

^a Agricultural, domestic and production wells will be sampled later in 2012 as deemed practical and dependent on access. .

^b Formation was interpreted from logs and geologic maps, so some wells may be open to multiple formations.

^c Well logs were not found for these agricultural and domestic wells, so construction information is limited

* - Exact date of installation is not known for MMW004

** - Water level to be monitored

*** - Water level to be monitored, if groundwater is present, sampling of this well will be considered following consultation with the A/T.

Not proposed for sampling in 2012 and was not sampled in 2010.

ATTACHMENT 1
2009 AND 2010 SURFACE WATER MONITORING
SAMPLING AND ANALYSIS PLAN

ATTACHMENT 2
2009 GROUNDWATER MONITORING
SAMPLING AND ANALYSIS PLAN

ATTACHMENT 3
2010 GROUNDWATER MONITORING MEMORANDUM